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ABSTRACT

This study addresses two questions: (1) Why do fourth grade students in Rhode Island perform better on the Iowa Tests of Basic Skills (ITBS) than eighth grade students?, and (2) Why do Rhode Island parochial students perform better on the ITBS than public school students? The examination of both questions focused on three areas: school setting factors, population factors, and psychometric and test-intrinsic factors. Data were collected from interviews with teachers and administrators, a teacher questionnaire, demographic and test score files from the Rhode Island Department of Education, and the ITBS technical manuals. Public school fourth to eighth grade differences were substantiated and attributed to differences in teacher perceptions of parental support, time spent in teaching reading, rate of absenteeism, and teacher perceptions of the effectiveness of discipline procedures. Likewise, parochial/public school differences were attributed to differences in the percentage of female students, teacher perceptions of parent support and student motivation, fathers' occupational status, time spent in teaching basic skills, pupil/teacher ratios, rate of absenteeism, and teacher perceptions of the effectiveness of discipline procedures. Complete data are available in the final report (TM 007 157). (BW)

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EXECUTIVE SUMMARY OF
ACHIEVEMENT IN THE BASIC SKILLS:
4th/8th GRADE,
PUBLIC AND PAROCHIAL SCHOOLS

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INTRODUCTION

The Curriculum Research and Development Center has undertaken a research project for the Rhode Island Department of Education to answer two questions:

1. Why do fourth grade students in Rhode Island Schools tend to perform better than eighth grade students in relation to national norms on the Iowa Test of Basic Skills?

2. Why do parochial school students in Rhode Island, especially at the eighth grade level, tend to perform better than public school students in relation to national norms on the Iowa Test of Basic Skills?

The purpose of this executive summary is to introduce the reader to a general overview of the methods undertaken in examining the two questions, the findings extracted from the data, and the conclusions drawn by the researchers working on the project. It has been prepared at the request of the Rhode Island Department of Education for presentation to the Rhode Island Board of Regents. The summary contains information drawn from the text of the final report submitted to RIDE.

METHODOLOGY

In responding to the Request for Proposals issued by RIDE, the CRDC proposed that the examination of both questions be focused on three areas: (1) School Setting Factors, (2) Population Factors, (3) Psychometric/Test Intrinsic Factors.

1. School Setting Factors

The examination of "school setting factors" focused upon four data sources. These were:

A. Iowa Test of Basic Skills (ITBS) - examination of the administration, use, and attitudes towards the standardized test.

B. Parent Attitudes - Examination of the attitudes of parents toward educational policies of the school, and their interest in their child's education.

C. Organizational Aspects - Exploration of the organizational environment within the school.

D. Curriculum and Instruction - Examination of the curricular and instructional activities undertaken in the school.

Data for examination of the School Setting Factors were collected by two means:

1. Interviews with classroom teachers and administrators at building and central administration levels.

2. A short questionnaire administered to classroom teachers.

Schools selected for interviews included:

1) Two high achieving public fourth grades
2) Two high achieving public eighth grades
3) Two low achieving public fourth grades
4) Two low achieving public eighth grades
5) Two high achieving parochial fourth grades
6) Two high achieving parochial eighth grades
7) Two low achieving parochial fourth grades
8) Two low achieving parochial eighth grades

A semi-structured interview form was developed and field tested prior to its use in the interview process. For each school selected, at least five classroom teachers from different grade levels, the building administrator, and personnel from the central office administration were interviewed.

A short form questionnaire was developed to elicit information in specified areas from teachers who were not interviewed.

2. Population Factors

The examination of population factors focused upon the following areas:

A. Socioeconomic Status and Achievement - examination of the background of students and its relationship to achievement.

B. Other Population Factors - Examination of specific demographic variables or selection factors which might impact upon student achievement.

Data for examination of the Population Factors were collected from two sources:

1. Interviews with teachers and administrators plus the short form questionnaire.

2. Computer tapes of demographic information collected by the Rhode Island Department of Education during statewide ITBS testing.

Questions were added to the semi-structured interview form and the short form questionnaire to gather data pertaining to the Population Factor area.

Duplicates of tapes containing demographic information collected by the Rhode Island Department of Education were obtained from Rhode Island College.

3. Psychometric/Test Intrinsic Factors

The examination of the impact of psychometric/test intrinsic factors upon the analysis and/or interpretation of the Rhode Island State Testing data focused upon the following two areas:

A. General Scaling Issues - Examination of certain inherent characteristics of the ITBS, its normative information, and various problems associated with making longitudinal comparisons based upon this normative information.

B. Re-examination of Test Data - The ITBS state testing data for 1970-71 and 1974-75 were re-analyzed. This re-analysis statistically examined both public/parochial and fourth/eighth grade score differentials for the total score distributions rather than restricting the examination to simple average scores. The impact of test-inherent factors upon the score distributions and their interpretation was studied.

Data for the examination of psychometric/test intrinsic factors were obtained from two sources:

1. Information from the ITBS technical manuals provided by the Houghton-Mifflin Company and phone conversations with A. N. Hieronymus, the principal author of the ITBS.

2. Computer tapes containing ITBS scores of all students who participated in the Rhode Island State testing program during the period from 1969 to 1975.

Because of the focus of the study, it was desirable to analyze the achievement of one group of students at both their fourth and eighth grades. In order to select for analysis what was generally considered to be the "cleanest" available set of data covering a four-year period, it was decided to use data on students who were fourth graders in 1970-71 and eighth graders in 1974-75.

LIMITATIONS

In examining this executive summary, the reader is cautioned that findings, recommendations and conclusions are based upon a short term research project which sought to address the two questions posed by

RIDE by identifying variables which showed differences. These findings, recommendations and conclusions are not intended to provide a complete and definitive answer to the two questions, but rather to give information about the subjects and identify areas for future research.

In each section the reader will be made aware of the types and extent of data which were utilized by the researchers in examining the questions. In no case is the information exhaustive of all data which might have been used or collected if more time and resources had been available.

Therefore, this report is intended to provide the Rhode Island Department of Education with basic data and information about the two questions. It is assumed that an extensive research project might be undertaken to examine these questions in-depth if more definite information was desired based upon the results presented here. It is also assumed that it is incumbent upon the reader to examine the final report for specific information pertaining to any area addressed in the executive summary.

Fourth and Eighth Grade Differences

The question posed in the request for proposals was:

> Why do fourth grade students in Rhode Island schools tend to perform better than eighth grade students in relation to national norms on the Iowa Test of Basic Skills?

The information presented here results from the analysis of data gathered through the means discussed under methodology. The presentation will be divided into three sections: School Setting Factors, Population Factors, and Psychometric/Test Intrinsic Factors.

School Setting Factors

Interview data revealed several differences in the activities undertaken and the process of education in fourth and eighth grades.

In relation to instruction, eighth grade schools have a pupil/teacher ratio which is nearly 10 students (on the average) higher than fourth grade schools.

Teachers report less time is spent on reading skills in the eighth grade (average 424 minutes per week) than in the fourth grade (average 507 minutes per week).

Eighth grade students spend, on the average, fewer minutes per day in an instructional setting than fourth grade students (276 per day for eighth grade with 301 per day for fourth grade). This amounts to somewhat more than two more hours per week instructional time for fourth grade students.

In addition, eighth grade level classroom teachers report that more activities are undertaken within one school day than in fourth grade level schools. It was also noted that more interuptions of regular instruction time were reported at the eighth grade level.

Finally, teachers in the eighth grade schools indicated that the amount of instructional time available for basic skills was not adequate. Fourth grade teachers felt that amount of time devoted to math and reading instruction was adequate.

Teachers reported that discipline procedures were less effective at eighth grade level schools than at the fourth grade level. The absentee rate in eighth grade schools averages about 2 days more per year per child than in fourth grade schools. In relation to teacher-principal relationships, eighth grade level teachers reported they were less satisfied with the support and understanding exhibited by their principal than were fourth grade level teachers.

Findings:

More time is devoted to instruction, in general, and to reading instruction in particular in the fourth grade.

Teachers in fourth grade level schools seem more satisfied with their instructional activities and the general work environment.

Conclusion:

Eighth grade schools have more discipline problems, more absences, fewer minutes of instructional time, less satisfied teachers and a more complex environment. Research has indicated that the level of the organizational climate of the school can impact upon the performance of students. It appears that the differences in ITBS scores between fourth and eighth grades may be at least partially attributable to these variables.

Population Factors

In the examination of the data pertaining to fourth and eighth grade differences concerning Population Factors, it was determined that only the perceived attitude of parents appeared to give information about possible differences in achievement. These data were collected during the interviews.

It is important to note that parents were not interviewed. Problems pertaining to time and resources needed to interview parents were seen as too costly to be undertaken in this project. The decision was mutually agreed upon by the contractor and members of the RIDE staff.

Teachers in fourth grade schools indicated that they perceived parents to be more supportive of student homework activities than eighth grade parents. Parents were perceived to be more concerned about the quality of education at the fourth grade than at the eighth grade level. This information indicates that parents at the fourth grade level are more supportive of the educational system than parents at the eighth grade level.

Findings:

This general attitude of parents can also be evidenced in relation to the support perceived by teachers. Fourth grade level teachers indicated they perceived parents to be more supportive of their position than eighth grade parents. In addition, fourth grade parents were reported more active in school activities than were eighth grade parents.

The data indicate distinct differences between the attitudes of fourth and eighth grade parents as perceived by teachers.

Conclusion:

While the reliability of teacher perception of parent attitudes may be questioned, the literature does indicate these differences have been noted previously. The effect of these attitudes is an area which may be of interest in future research. However, it is the opinion of the researchers that the difference between the attitudes of parents at the eighth and fourth grade levels is a variable which may explain some difference on student scores on the ITBS.

Psychometric/Test Intrinsic Factors

The ITBS was examined from two perspectives in relation to differences in fourth and eighth grade test score results:

1. Test Administration - data gathered through interviews.

2. Psychometric/Test Intrinsic Factors - analysis of data presented in the RIDE request for proposals and the computer tapes.

Test Administration

Two distinct factors were found in relation to the administration and use of the ITBS. More eigth graders (three times as many) were tested at one sitting as were fourth graders. Secondly, fourth grade teachers used the ITBS as a diagnostic tool and felt it was more worthwhile to give than eighth grade teachers.

Psychometric/Test Intrinsic Factors

The normative scores which were presented in the RIDE request for proposals to illustrate the apparent decline between fourth and eighth grades were grade equivalent scores. The grade equivalent of a given raw score is intended to indicate the grade level at which the typical student (the student at the median of the distribution) makes this raw score. The average expected yearly growth for a student at the median of a distribution is, therefore, defined to be ten months. The publishers of the ITBS assert, in several places in their manuals, that to assume a common expectation for the growth of all students is unrealistic since it should be expected that those who are above grade level (i.e., above the median) should be expected to gain more than ten months, just as those who score substantially below grade level ought to be expected to gain less than ten months in a school year.

What is also not assumed, nor implied, by the grade equivalent score scale is the equality in terms of relative performance of the meaning of the unit of measurement "month" from grade to grade. That is, a four month gain (or loss) at the fourth grade does not convey

the same meaning as does a four month gain (or loss) at the eighth grade when describing how well (or poorly) fourth and eighth grade students are doing in relation to the national norms. Dramatic differences in score interpretation will result if students' percentile standing rather than grade equivalent scores are used for comparing fourth and eighth grade student performance on the ITBS. For example, being one year below grade level means something quite different at grades 4 and 8 when the concern is how the students compare to the national population. At grade 4 if a student is one grade equivalent year below the norm on the ITBS composite score, the student is in the 14th percentile; at grade 8 a student one grade-equivalent year below on the composite score is in the 35th percentile. As this example illustrates, identical grade equivalent deficits in grades four and eight are not identical in meaning when one is interested in a student's, or group of students, relative standing in their norming population. It is a fact that for all subtest areas of the ITBS, when grade equivalent scores at grades four and eight are examined and the students are scoring even slightly below grade level, fourth grade data will look "better" than eighth grade data if grade equivalent scores are used. As a consequence of this, even if students maintain their standing relative to the national norming population (i.e., if they have the same percentile rank at grades four and eight) they will not achieve a four year growth. For purposes of comparison of the relative achievement at two different grade levels, therefore, the use of the grade equivalent scale score is inappropriate. The publishers of the ITBS, therefore, recommend that for purposes of comparing the status of pupils in a group from test to test that percentile scores be used rather than grade

equivalents.

Table 1 presents, for each of the four test areas contained in the RIDE request for proposals, the average grade equivalents and the national percentiles associated with these grade equivalents. Since a percentile represents standing within a specified population the "expected change" from fourth to eighth grade would be 0--i.e., the expectation would be that the students would neither gain nor lose, but would maintain their relative position in the population. Inspection of Table 1 illustrates that, when change relative to the national norm group is examined, the average public school student decreased slightly (from a loss of between three to seven percentile points) while the average parochial school student increased slightly (from no change to a gain of two percentile points). Further, the average for the public school students started very close to the 50th percentile (the "national average") and ended very close to the national average. On the Composite, or overall score, the change was from the 52nd to the 48th percentile. Parochial school students at the fourth grade level were somewhat above the national average (the 59th percentile) at grade four and improved very slightly (to the 60th percentile) by grade eight.

The preceding analysis was based on a re-examination of data available in the RFP using the national percentile norm tables. The findings which follow are based on a re-analysis of student test scores from 1970-71 (fourth grade) and 1974-75 (eighth grade). It uses, as its measure of central tendency, the median score rather than the mean score, since a) percentile scores represent an ordinal scale rather than in interval scale and thus it is not proper to compute a mean; and b) the 50th percentile is, by definition, the median.

TABLE 1

Alternative Longitudinal Comparison (1970-71 to 1974-75)

of the Longitudinal Data presented by RIDE

ITBS Score		4th Grade 1970-71		8th Grade 1974-75		Expected Gain	Actual Gain
		GE	Natl. %ile.	GE	Natl. %ile.	Natl. %ile.	Natl. %ile.
Composite	Public	4.1	52	7.9	48	0	-4
	Parochial	4.3	59	8.5	60	0	+1
eading	Public	4.0	48	7.8	45	0	-3
	Parochial	4.3	56	8.5	57	0	+1
otal anguage	Public	4.2	54	7.8	47	0	-7
	Parochial	4.6	63	8.8	63	0	0
otal thematics	Public	4.1	52	7.9	48	0	-4
	Parochial	4.1	52	8.2	54	0	+2

Examination of differences in student achievement are based on an examination of not only the differences between scores of the average (median) student, but also between students at other points in the distribution. Thus, the summarized findings which follow use two basic methods of analysis:

1) statistical tests of significance for differences in cumulative frequency distributions at fourth and eighth grades based on national percentile norms and

2) an examination of student scores at three critical points in the distribution: the 25th, 50th, and 75th percentiles based on Rhode Island scores.

Examination of the total score distributions for public school students indicate that, based upon national percentile norms, Rhode Island fourth grade students perform relatively better than do eighth grade students. For all ITBS subtests the differences between the fourth and eighth grade score distributions were statistically significant, with the eighth grade score distributions being lower than the fourth grade score distributions.

Examination of the total score distributions for parochial school indicate that, based upon national percentile norms, Rhode Island eighth grade students perform relatively better than fourth grade students on the ITBS Reading and Language tests, relatively lower on the Mathematics test, and there are no differences on the Composite score.

Examination of the 25th, 50th, and 75th percentiles of the fourth and eighth grade achievement scores for public and parochial school students simply corroborated the findings relative to the total score distribution--i.e., when national percentile norms are the common reference point for gauging achievement score changes for public and

parochial schools, public schools demonstrate a slight "slippage" relative to the national population while parochial schools demonstrate a slight increase in their standing relative to the national population. It should be noted that although the differences in total score distributions were statistically significant the actual net amount of losses or gains made were quite small.

PUBLIC AND PAROCHIAL DIFFERENCES

The request for proposal stated the following question:

> Why do parochial school students in Rhode Island, especially at the eighth grade level, tend to perform better than public school students in relation to national norms on the Iowa Test of Basic Skills?

The data used in presenting the following information were collected in the manner described under the methodology section.

This portion of the executive summary will be divided into the following sections:

1. School Setting Factors
2. Population Factors
3. Psychometric/Test Intrinsic Factors

School Setting Factors

From an organizational aspect, several differences were noted between public and parochial schools during the interviews:

Parochial school students missed fewer days of school per year (average 5.6) than public school students (average 9.1). Parochial school teachers are happier with the support and administrative activities in their buildings than public school teachers. In addition, parochial school teachers perceive disciplinary policy to be more effective in their schools than do public school teachers.

In relation to curriculum and instruction, several more differences were noted:

Parochial schools average more minutes of instruction in basic

skills each week than public schools. In math instruction, parochial schools average 220 minutes per week while public schools average 193 minutes per week. In reading instruction, parochial schools average 620 minutes of instruction per week and public schools average 465.5 minutes per week.

Public schools engage in a wider variety of academic activities (e.g., foreign language, science, math, and vocational courses) than parochial schools. Public schools also offer more "special" programs than parochial schools (e.g., special education, remedial math and reading, hearing classes, etc.).

In general, the interview data show that staff members see some important differences between public and parochial students. Public school teachers, particularly in low achieving schools, consistently rate their students as less eager to please, less motivated, less disciplined, less cheerful, less bright, and less interested in school. Parochial teachers rate their students as more cooperative, motivated, disciplined, cheerful, bright and high in school interest.

Findings:

The organizational environment of the parochial school in relation to discipline, teacher-principal relationship, and general climate is more condusive to a positive learning environment.

The curriculum of the parochial school is intended to stress the basic skills area while the public school curriculum is varied and intended to deal with more subject areas.

Population Factors

Socioeconomic Status and School Achievement

A number of studies were found indicating the SES has proven to

be the most useful variable in predicting student achievement. Based upon this information, this research attempted to ascertain if public school students and parochial school students differed in SES.

In this regard, a higher percentage of parochial school students:

1. were female (fourth and eighth grades)
2. had books in their homes (fourth and eighth grades)
3. had books at their homes they liked to read (fourth and eighth grades
4. owned library cards (fourth and eighth grades)
5. discussed school with their parents (eighth grade)
6. had parental assistance with school work (fourth grade)
7. had fathers whose occupation was clerical, professional, or manager or owner (eighth grade)
8. had fathers who attended college (eighth grade)
9. desired to attend college (eighth grade)
10. preferred professional occupations (eighth grade)

Finding:

On the basis of the data for both grades, it appears that a variety of demographic variables may at least contribute to the observed differences in parochial and public school achievement test results.

Selection Factors

Information collected in the interviews suggests that no selection factors or entrance requirements to public or parochial schools are evident other than religious affiliation.

Conclusion:

Selection factors or entrance requirements, as imposed by the public or parochial schools, are not variables which can explain differences in ITBS test results.

Demographic Data

In addition to the contracted activities, RIDE asked that CRDC staff members examine the demographic data collected and analyze its use.

The State Department of Education's interest in demographic data is due to the relationship of socioeconomic status to school achievement and a desire to be informed about specific elements of that relationship. For those items that yield suitable data (and which have been suitably coded) correlations with ITBS composite grade equivalent score were computed. Although many were statistically significant, all are indications of only slight relationships. It is because SES indices are affected by all of these small relationships (and many others) that they become a "proxy" measure (see previous section). In this data, only the number of books in the home was substantially related to grade equivalent scores for both grades.

In view of these correlations and the relationships of items within the demographic survey, it is recommended that:

1) Primary emphasis in the collection of demographic data should be on obtaining reliable information about parents' education and occupation. To this end, the form should provide response options, there should be a clear lower-to-higher status progression of occupations, and some attempt at verifying the responses.

2) An effort should be made to determine the validity (accuracy) of the fourth graders' responses through parent interviews or review of documents.

3) RIDE should continue to gather data concerning parent occupation and education since these factors relate to student achievement.

4) Any items that are to be retained (see discussion of specific items in Section IV and the tables in the full report) should be studied using multiple regression techniques to determine whether they provide unique information not submitted by the "proxy" SES indicators, parental occupation and education.

5) To facilitate analysis, one SES index should be computed for any future studies. RIDE should determine how that figure is to be computed.

Psychometric/Test Intrinsic Factors

In the examination of fourth to eighth grade achievement score changes presented in a preceding section of this summary it was noted that, for all ITBS subtests at both fourth and eighth grades, parochial school students scored higher than did public school students when both groups were compared to the national norms. This fact should not surprise anyone since, as is noted by the publishers of the ITBS, "In general, performance on the test by pupils in Catholic schools is extremely variable and is considerably above national performance, particularly in the upper grades." The important factor to consider is how to interpret these differences when inferences relative to the performance of the public and parochial schools within Rhode Island is the issue.

Central to a rational interpretation of any standardized test score, or group of test scores, is information contained in the technical manuals produced by the test publishers themselves. In addition to publishing national norm tables based upon a regionally and ethnically representative sample of students across the country, publishers often make separate norm tables available for various regional and cultural groups. Implicit in the publisher's preparation of a variety of norm

tables is the concept that the most appropriate way to interpret the scores of an individual or group is in relation to the norm group which is the most like that individual or group.

In examining the differences in achievement of the public and parochial school students on the Rhode Island State testing program, therefore, the following sets of analyses were conducted:

a) examination of the test publishers' manuals based on national norms and norms for students in Catholic schools to determine what, if any, national patterns of achievement differences existed; and

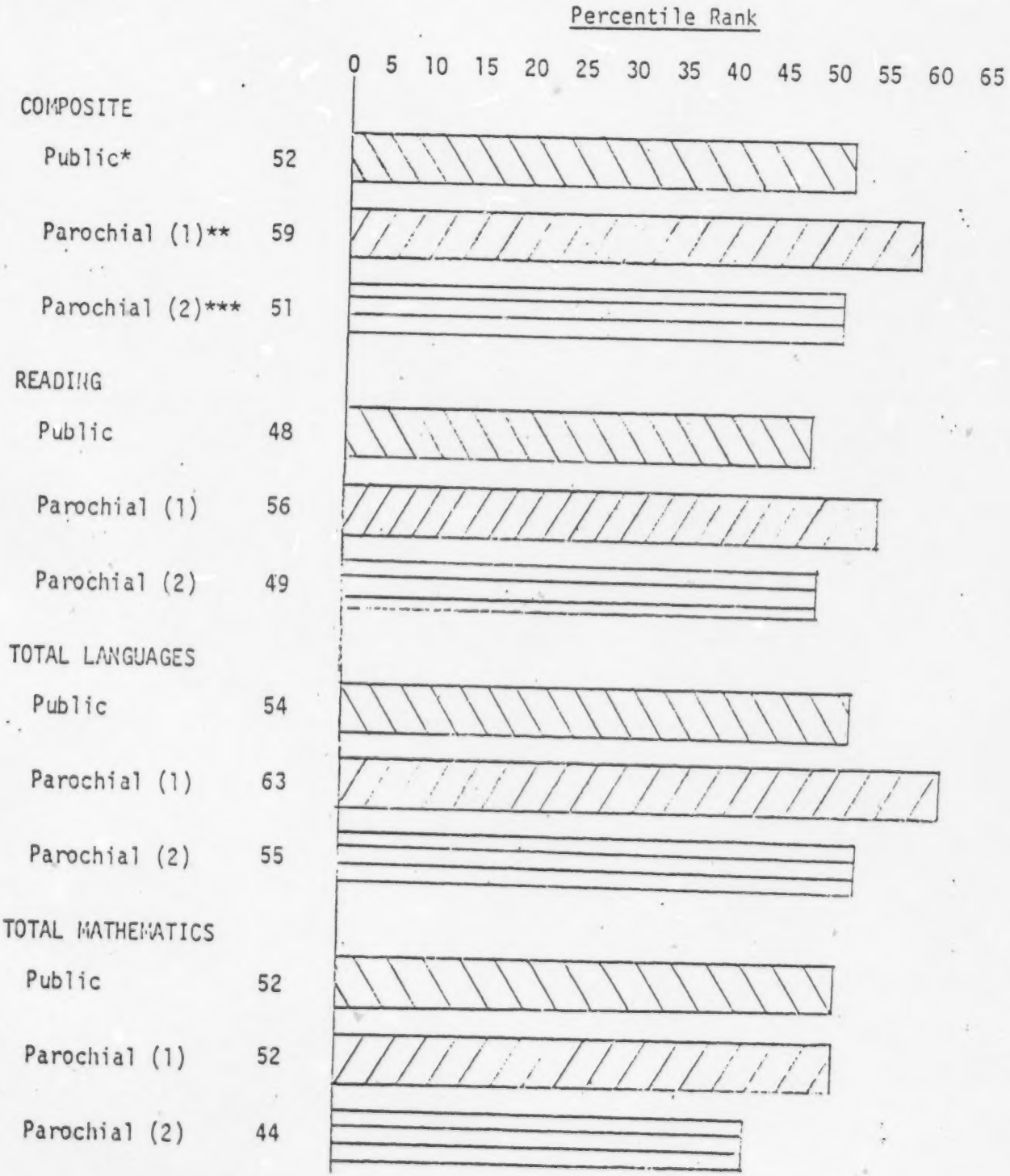
b) re-analysis of Rhode Island public and parochial school students' achievement compared with their most appropriate norm group or groups.

As was mentioned earlier, examination of national and Catholic norms using the ITBS manuals indicates that grade equivalent scores associated with the various percentiles are substantially higher for the Catholic norm sample than for the national norm sample; there is typically a two to three month differential at fourth grade, and a four to eleven month differential at eighth grade. It was decided, therefore, to re-examine the Rhode Island parochial school achievement scores to see how they compared to the norms for Catholic schools nationally.

Table 2 presents, for each of the four ITBS test areas contained in the RIDE request for proposals, the percentile ranks associated with the "average" public and parochial school student. For the public school students a single percentile rank, obtained from the national norms tables, is presented. For the parochial school fourth grades, however, <u>two</u> percentile ranks are presented--parochial (1) is obtained from the national norms table and parochial (2) is obtained from the norms table for Catholic schools. As inspection of Table 2 illustrates,

Table 2

ITBS Achievement of Fourth Graders by Type of School
(1970-71)



*: Public: Using National Norms Tables
**: Parochial (1): Using National Norms Tables
***: Parochial (2): Using Catholic School Norms Tables

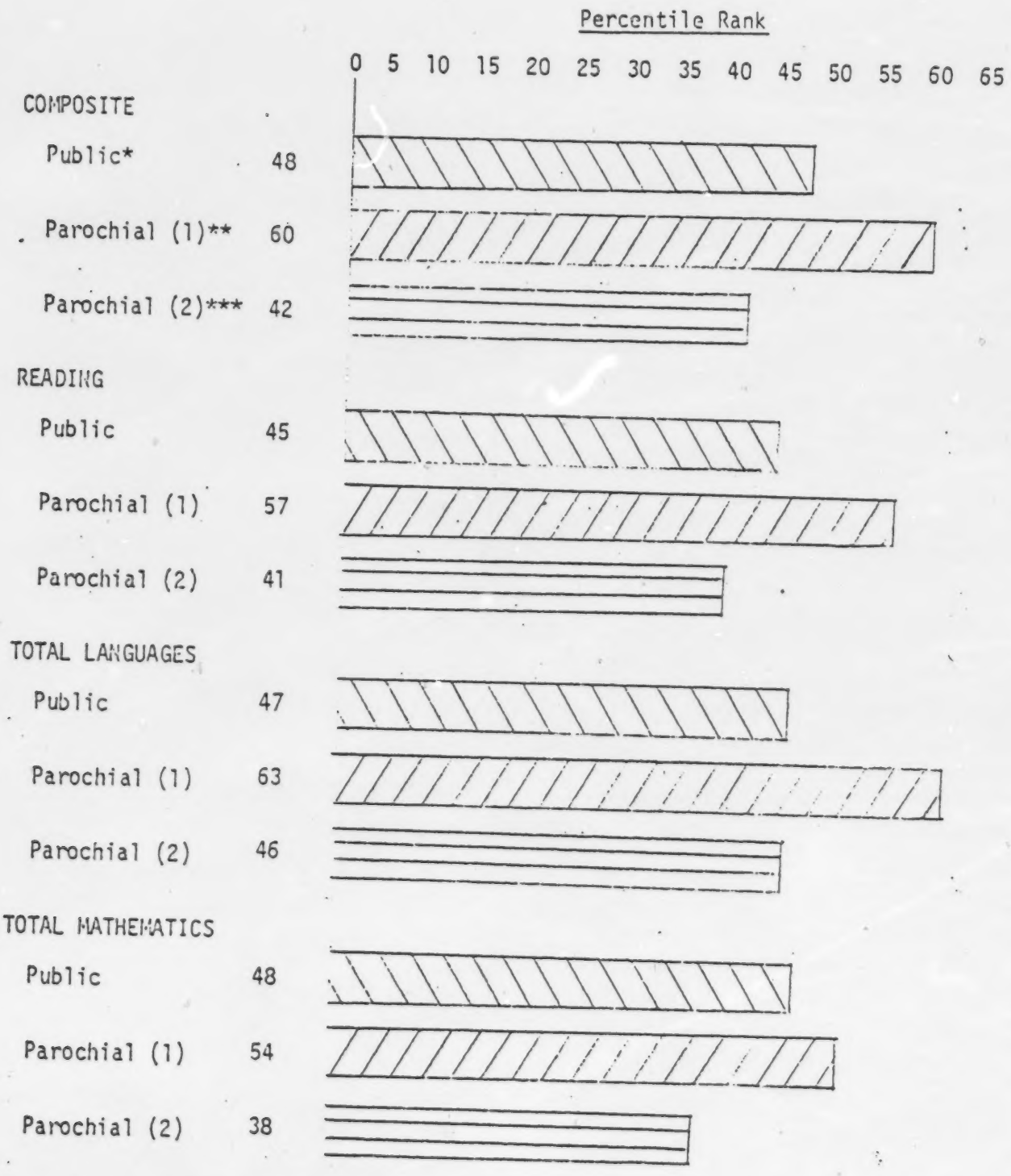
the percentile for the average fourth grade public school student is below the percentile for the average fourth grade parochial student [parochial (1)] when both are compared to national norms. When the parochial school students are compared to what is perhaps a more appropriate reference group, the Catholic school norms, a somewhat different picture emerges. Comparing performance of public with parochial (2) indicates that when the public and parochial schools are compared, each to their most comparable reference group, their respective achievement relative to these groups is very close--on the ITBS Composite score the percentile ranks are 52 and 51 for the public and parochial schools, respectively.

Table 3 presents a similar picture at grade eight. As was the case at grade four, the absolute achievement level of the parochial school students exceeds that of the public school students when both are compared to the national norms [public vs. parochial (1)]. When comparisons are made vis a vis their more comparable reference group, however, a different picture emerges. While the public school students remain quite close to the center of their reference group (composite score percentile = 48) the parochial school students score moderately below the center of their (Catholic schools) reference group (composite score percentile rank = 42).

Finally, Table 4 examines achievement score <u>changes</u> from fourth to eighth grade for public and parochial school students, where changes are defined in terms of gains or losses in standing relative to one's norm group. As can be seen in Table 4 there are small to moderate decreases in Rhode Island public school students' standing relative to the national norms between fourth and eighth grades (losses range from

Table 3

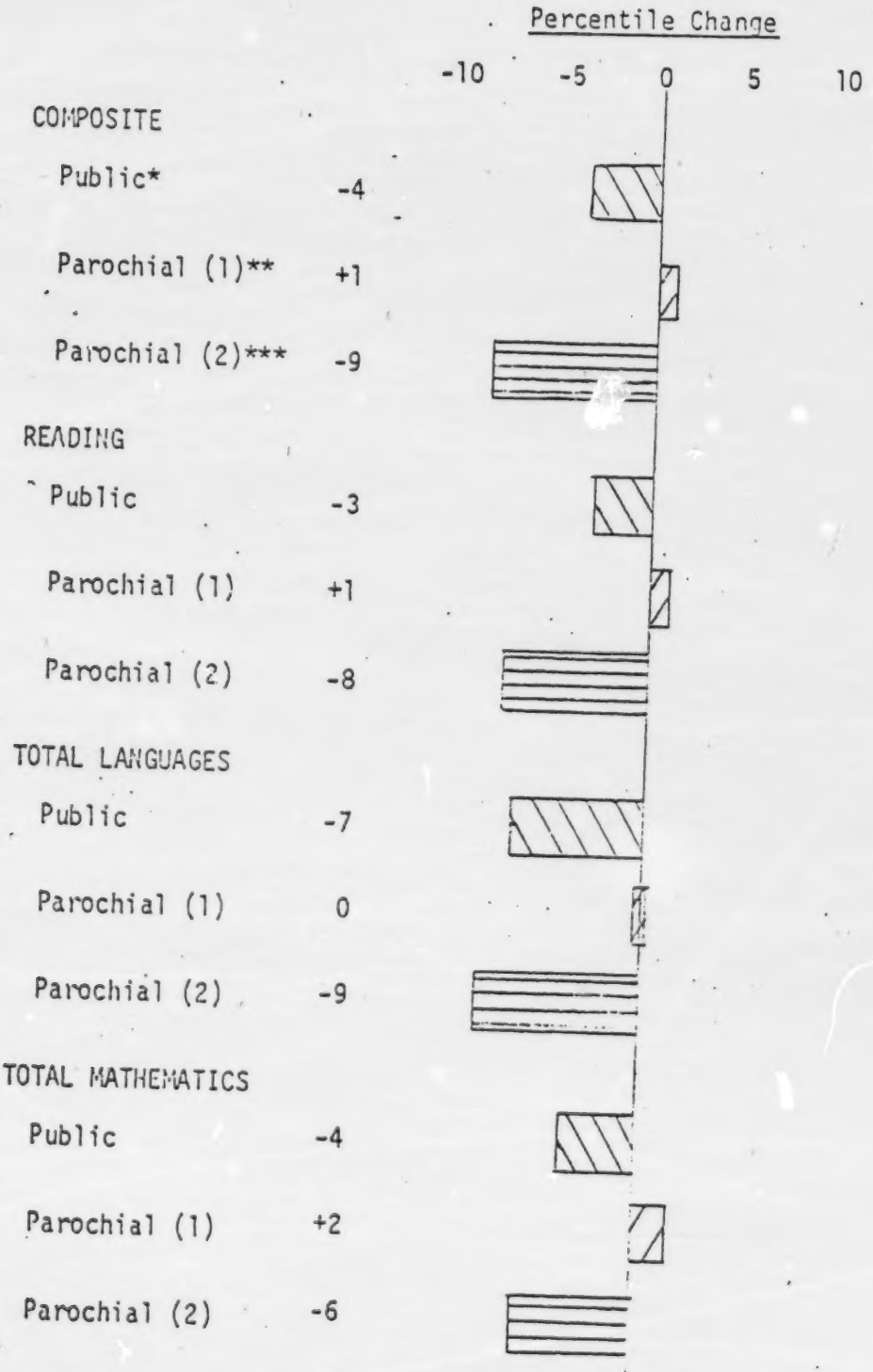
ITBS Achievement of Eighth Graders by Type of School
(1974-75)



*: Public: Using National Norms Tables
**: Parochial (1): Using National Norms Tables
***: Parochial (2): Using Catholic School Norms Tables

Table 4

Fourth to Eighth Grade ITBS Achievement Changes by Type of School



*: Public: Using National Norms Tables
**: Parochial (1): Using National Norms Tables
***: Parochial (2): Using Catholic School Norms Tables

three percentile points in Reading to seven percentile points in total Language). When Rhode Island parochial school student changes are examined relative to national norms [parochial (1)] it can be seen that these changes range from no change on the total Language score to a gain of two percentile points on the total Mathematics score. When Rhode Island parochial school student changes relative to the norms for Catholic schools [parochial (2)] it can be seen that moderate decreases occur in percentile standing (losses range from six percentile points in Total Mathematics to nine percentile points on Total Language and the Composite Score).

Summary

This investigation was undertaken to determine what factors might contribute to differences in student scores on the Iowa Test of Basic Skills between Public and Parochial schools and Public 4th and 8th grade schools.

The design of the study was primarily descriptive data collection and reporting. Particular emphasis was given to identifying differences between public and parochial schools and 4th and 8th grade education in the public setting. It was not an experimental design from which casual statements can be made concerning the variables identified. We cannot say that changing variables identified in this study would necessarily change student performance on the Iowa Test of Basic Skills.

We have cautioned the reader throughout about the generalizability of this study given the design and method of data collection. This does not, however, negate the differences found in those schools examined and the data analyzed.

What we have presented is a list of differences found between Public and Parochial schools and public school 4th and 8th grade education. This information is presented to the Rhode Island Department of Education and the Board of Regents for their consideration in policy making and/or future research.

The differences we have listed are not generally surprising to those familiar to the educational process in Rhode Island. We have, however, narrowed the list of potential differences identified in the beginning of the study by RIDE staff, URI staff and the Citizens Advisory Committee.

We have identified the following differences in Population Factors:

a. A difference in the percent of female students attending the parochial and public schools.

b. Differing teacher perceptions of parental support in the public and parochial settings and within the public 4th and 8th grade setting.

c. Differing teacher perceptions of student motivational variables public and parochial settings.

d. Differences in the reported father's occupational status of parochial and public school students.

In the area of School Setting Factors differences were found in:

a. The amount of time spent in direct instruction of basic skills:

   1. parochial schools spend more time teaching math and reading than public schools.

   2. public school fourth grades spend more time teaching reading than public school eighth grades.

b. Parochial schools have higher pupil/teacher ratios than public schools.

c. The number of student absences:

   1. public school students missed more days of school than parochial students.

   2. public 8th grade students missed more days of school tha public 4th grade students.

d. Teacher perceptions of the effectiveness of discipline procedures in their school:

   1. parochial teachers felt their schools' discipline procedures were more effective than public school teachers'.

   2. public 4th grade teachers felt their schools' discipline

procedures were more effective than 8th grade public teachers

Finally, in the Psychometric/Test Intrinsic Factors we have found:

a. Upon re-analysis of the Iowa Test of Basic Skills Test scores for 1970-71 and 1974-75 in comparison with National Norms:

   1. Public school 4th grade to 8th grade differences and Public/Parochial differences noted in the original RIDE analysis were basically substantiated.
   2. There is a statistically significant drop in test scores relative to national norms for public 4th grade students compared to public 8th grade students.
   3. There is a statistically significant difference between the test scores of public school students and those of parochial school students.